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ABSTRACT

This article documents the development of an instrument that would allow researchers and clinicians to assess the ways in which students differ qualitatively with respect to how they cope with the demands of evaluative situations. The Academic Anxiety Coping Scale identifies modal types of coping cognitions and behaviors that students employ palliatively and instrumentally in academically stressful circumstances to attenuate anxious arousal. The scale was administered to 215 university and community college undergraduates. Factor analysis revealed four factors: (1) emotional/physiological; (2) relaxation/letting go; (3) preparation and planning; and (4) worry. One way analysis of variance compared students on each factor, first by group (community college versus university) and then by gender. Females reported more worry than males, and conversely, males reported using more relaxation techniques than females. University students reported more preparation and planning and greater use of relaxation techniques than community college students. Seniors also reported using relaxation more than freshmen. Further research is needed to follow through on this pilot study to revise and consolidate scale items. (Contains 16 references.) (Author/SLD)

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Development of an Academic Anxiety Coping Instrument

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Running head: ACADEMIC ANXIETY

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Abstract

Despite the enormous amount of research accumulated on the topic of test anxiety, the role of coping processes during test anxiety has been relatively overlooked. This article documents the development of an instrument that would allow researchers and clinicians to assess the ways in which students differ qualitatively with respect to how they cope with the demands of evaluative situations. The *Academic Anxiety Coping Scale* identifies modal types of coping cognitions and behaviors that students employ palliatively and instrumentally in academically stressful circumstances to attenuate anxious arousal. The *Scale* was administered to 215 undergraduates enrolled at a large midwestern university and at a nearby community college. A factor analysis revealed four factors: (1) emotional/physiological, (2) relaxation/letting go, (3) preparation & planning, and (4) worry. One-way ANOVAS compared students on each of the four factors, first by group (community college v. university), then by year-in-school (freshmen, sophomore, junior, & senior), and finally by gender. Females reported more worry than males, and conversely, the males reported using more relaxation techniques than females. University students reported more preparation/planning and greater use of relaxation techniques than the community college students. Finally, seniors reported using relaxation more than freshmen. This research served as a pilot study, further research is needed to revise and consolidate the items of the scale.

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Development of an Academic Anxiety Coping Instrument

Approaches to Understanding Test Anxiety

Despite the enormous amount of research accumulated on the topic of test anxiety, the role of coping processes during test anxiety has been relatively overlooked (Blankstein, Flett, & Watson, 1992). This neglect is unfortunate for several reasons. First, many treatment interventions involve the teaching of coping skills to help students overcome test anxiety (D'Alelio & Murray, 1981; Holroyd, 1976). Second, coping and not the presence of subjective anxious arousal may be considered the more crucial point in a test anxiety model. In this respect, Carver and Scheier (1986) noted that it is *not* anxious arousal that distinguishes between high and low test-anxious individuals; rather, what seems most important is one's cognitive and behavioral *coping* responses to that arousal and to the test situation. Additionally, Blankstein, et al. (1992) point out that there are a number of compelling reasons why there would be normative differences between how high and low test-anxious students cope. Hence, it seems desirable to pursue the development of an instrument that would allow researchers and clinicians to assess the ways in which students differ qualitatively with respect to how they cope with the demands of evaluative situations.

The most commonly used test anxiety assessment instruments do not address *how* students cope in stressful situations. Instead, they focus on how much or what type of arousal an individual is experiencing. For example, the Test Anxiety Inventory (Spielberger, 1980) measures an individual's degree of specific anxiety symptoms before, during, and after exams. The Suinn Test Anxiety Behavior Scale (Suinn, 1969) asks for an individual's degree of anxiety in response to certain evaluative situations. Wine (1980) has pointed out that these instruments and some others are limited in that they yield little information about the test-anxious individual.

In order to assess how students differ with respect to coping with test anxiety, the literature suggests a number of distinctions that should be considered. Folkman and Lazarus (1985) distinguish between problem-focused and emotion-focused coping, where the former is concerned with doing something to change the problematic situation and where the latter involves regulating distressing emotions. Not only is this direction of coping important, but so, too, are the cognitive and physiological symptomatic manifestations of test anxiety that the test-taker must cope against (Deffenbacher, 1980). There is also a temporal dimension to test anxiety (Rost & Schermer, 1989) such that coping strategies may differ with respect to how distant in the future the evaluative event is to take place. There are certain critical situational conditions which call forth emotion- and problem-focused coping behaviors and which tend to elicit (or exacerbate) in students anxiety-engendering cognitions and bodily reactions (Ottens, 1984). These situations include: inability to answer the first test question, ruminating about going "blank" on an upcoming exam; watching classmates cram before the test is distributed; and awareness that classmates are making faster progress through the test.

During stressful academic situations, it is also necessary to consider the actual types of overt and covert behaviors that individuals might employ given: (a) the primacy of emotion- or problem-focused coping; (b) which symptomatic manifestations of anxiety need to be coped against; (c) at what point in time the evaluative event is to take place; and (d) the

nature of the critical academic event that triggers the student's anxiety-state reaction. A review of the test anxiety literature and clinical observations suggest that eight categories may effectively span the range of coping responses generally employed: preparation and planning, support seeking, self-reassurance, movement away from task, relaxation techniques, attention into task, attention into self, and over-responding.

We are attempting to develop an instrument that identifies modal types of coping cognitions and behaviors that students would employ palliatively and instrumentally in stressful circumstances to attenuate the arousal that can accompany these circumstances. Such an instrument has relevance given the proliferation of cognitive-behavioral interventions in the counseling of academically anxious students. Moreover, it is important to ascertain if students employ qualitatively different coping methods subsequent to counseling.

Constructing the *Academic Coping Scale*

Establishing Content Validity

Several procedures were undertaken in order to establish the instrument's content validity. First, 16 relatively common academic situations were identified as critical incidents likely to engender anxiety state reactions in college students. Examples of such critical incidents include: "When I hear classmates just before the exam quizzing each other over course material...," "when I get physically tense or nervous during an exam....," and "when a 'pop' quiz is distributed in class..." These 16 critical incidents were crafted to represent a cross-section of academic experiences including coping with academic exigencies of the situation as well as coping with debilitating anxiety symptoms.

Undergraduate students at a large midwestern public university were asked to rate the 16 academic situations on two 10-point Likert scales. First, the students estimated the extent of the impact or meaningfulness of each academic situation on her/himself (1 = Little Impact on You to 10 = Great Impact on You), next they estimated how the situation impacted other students. Subjects (N = 54) were undergraduates enrolled in two upper level Educational Psychology courses and one Sociology course at a large midwestern public university. The majority of students were upperclassmen: juniors (n=26, 48%) and seniors (n=25, 46%). The descriptive statistics revealed that each of the 16 academic situations were rated in the upper half of the Likert scale, 6 to 9, regardless whether the student was describing self or others. These results verified that the incidents represented relatively intense experiences.

Second, possible coping response items were generated to accompanying the 16 academic situations, the critical incidents. The items were written to be representative of the eight categories of coping responses gleaned from the literature and previous clinical experience with test anxious undergraduates. Each of the 16 critical incidents was fit with five to eight coping response items. For a definition of each category of coping response and a representative response item please see Figure 1.

Figure 1. Categories of Coping Responses and Representative Item

1. Preparation & Planning: Student's coping response is characterized by preparation and planning before an anticipated academic event.

"I do a thorough review of notes, text, old exams, or other materials"

2. Support Seeking: Student's coping response is characterized by seeking emotional or psychological support or by affiliating with others for social support.

"I call a friend or family member for support"

3. Self-Reassurance: Student's coping response is characterized by methods to positively perceive or construe the academic event, such as by engaging in self-talk that proves reassuring or that helps to "normalize" one's experience.

"I tell myself not to be concerned about the grade but just do the best I can"

4. Movement Away From Task: Student's coping response is characterized by behavioral or attentional movement *away* from the academic event through avoidance, escape, or focusing on external distractions.

"I find that I avoid sitting down and studying"

5. Relaxation Techniques: Student's coping response is characterized by the use of relaxation techniques to reduce anxious arousal.

"I breathe deeply and try to relax my nerves"

6. Attention into Task: Student's coping response is characterized by attentional movement *into* the academic task and *away* from self-concerns or *away from* external distractions. The student focuses on the task and becomes absorbed in it.

"I absorb myself in the task by thinking about how to answer the questions"

7. Attention into Self: Student's coping response is characterized by a heightened vigilance or scanning of internal processes or experiences. This response may include concentrating on worry or emotionality. Attentional movement is *into* self and *away from* the academic task at hand.

"I dwell on the panicky feeling -- it seems to take control of my thoughts"

8. Over-Responding: Student's coping response is characterized by increasing or even exaggerating one's behavioral efforts in the face of perceived danger. Coping responses in this category include examples of "over-responding" such as redoubling study effort, working faster, and acting compulsively.

"I determinedly persist with the question longer than I should"

Third, the critical incidents and coping response items were then presented to 12 professional counselors at the same large midwestern university who judged to which of the eight categories the coping response item belonged. If a coping response item received less than 2/3 agreement, the response was modified or deleted. The majority of the responses received greater than 80% agreement.

Finally, to ensure the content validity of the coping response items, four 30-minute focus group interviews involving a total of 30 undergraduates were conducted. Subjects were recruited by means of flyers posted in the main buildings across the same large midwestern public university. Students were given $3.00 for their participation in a focus group. Each group was presented with four of the academically critical incidents and the students were asked what happens to them in such a situation, specifically, how they respond cognitively, physically, and emotionally. Analysis of the audiotaped focus group interviews revealed that the students' personal coping choices were consistent with the eight categories derived from the research literature and clinical practice. Many of their personal examples seemed to reflect the coping response items of the instrument. The final revision of the *Academic Coping Scale* was then administered to a several groups of undergraduate students.

Administering the *Academic Coping Scale*

Subjects

Subjects were undergraduates students enrolled at a large midwestern public university (n=162, 75%) and at a nearby community college (n=53, 25%) for a total of 215 students. The number and percent by year-in-school was as follows: freshmen (22, 10%), sophomores (32, 15%), juniors (64, 30%), and seniors (97, 45%). The breakdown by gender of the 215 students was female (144, 67%) and male (71, 33%). The majority of the students were of the traditional age of undergraduates.

The university undergraduates (n=162) were enrolled in three courses, two sections each, of two of the basic courses offered in the Department of Educational Psychology, Counseling, and Special Education in the College of Education. The community college students (n=53) were enrolled in two lower level psychology courses.

The *Academic Coping Scale*

The *Academic Coping Scale* consisted of 16 academic situations, the critical incidents, and 101 coping response items distributed under each situation. After reading each situation the student responded to each coping response under that situation by circling a number on a six-point Likert scale (1 = Rarely to 6 = Almost Always) to best estimate how frequently she/he used the response in that kind of situation. The *Scale* was administered as a pilot study to all 215 undergraduates.

Results

After an initial analysis of the frequencies of the responses it was determined that the students at the nearby community college were significantly different in their responses as compared to the undergraduates at the university. The same results also were found when

comparing the upper class (juniors & seniors) with the lower class university students (freshmen & sophomores); therefore, only the 152 upper class students at the university were used to run the factor analysis and reliabilities. Two thirds of the students were female (67%) and the majority were seniors (62%), the remaining were juniors (38%). The entire subject pool of 215 undergraduates at both the university and community college were used to run the one-way analyses of variance.

Factor Analysis

The factor analysis using orthogonal rotation (SPSS) produced 29 factors with an eigenvalue of more than one. The first four factors each had eigenvalues greater than 4 and accounted for a total of 28% of the variance. A factor analysis forcing four factors was then performed. This produced four coherent factors with acceptable reliabilities as detailed below. The overall reliability for the *Academic Coping Scale* was coefficient alpha = .92.

The factors, number of items, percentage of variance accounted for, the single item with the highest factor loading, and the reliability are given as follows: Factor 1 (emotional/physiological), 15 items, 10.2% of the variance, "I keep focusing on how I feel," alpha = .87; Factor 2 (relax/let go), 20 items, 8.9% of the variance, "I pause to relax away the tension I'm feeling," alpha = .89; Factor 3 (preparation & planning), 16 items, 4.4% of the variance, "I have a study plan for managing my time," alpha = .85; Factor 4 (worry), 13 items, 4.1% of the variance, "I think about all the work that I need to get done," alpha = .84.

ANOVAS

A score for each factor was computed for each university and community college student and one-way analyses of variance (ANOVAS) were run using all 215 of the subjects. The students were compared on each of the four factors, first with a one-way ANOVA by group (community college v. university), then a one-way ANOVA by year-in-school (freshman, sophomore, junior, & senior), and finally a one-way ANOVA by gender (female v. male). No significant differences were found in scores on Factor 1 (the emotional/physiological scale) on any of the analyses.

The three one-way ANOVAS for the relaxation category, Factor 2, were all significant. The university students (M = 42.33) indicated that they used relaxation techniques more frequently than the community college students (M = 37.62), $F(1, 215) = 7.29$, $p < .01$. The degree to which relaxation techniques are chosen as a coping behavior was found to be significantly related to subjects' year-in-school (freshmen M = 36.5; sophomores M = 39.81; juniors M = 39.66; seniors M = 43.68), $F(3, 215) = 3.58$, $p < .05$. A Tukey-B test of differences on the one-way ANOVA revealed that the seniors had a significantly higher score on Factor 2 than the freshmen. Gender differences were also significant on Factor 2, with males having a higher mean, 43.54, than females, 40, $F(1, 215) = 4.82$, $p < .05$.

The preparation and planning scores, Factor 3, were significant between the university (M = 37.37) and community college students (M = 33.38) only, $F(1, 215) = 8.14$, $p < .01$, with the university students indicating more preparation and planning types of behavior. The scores on Factor 4, the worry scale, were significantly different on gender only, females had a higher mean, 50.32, than males, 45.17, $F(1, 215) = 10.43$, $p < .01$.

Discussion

Two of the four factors, Factor 2 and 3, were from our *a priori* categories (see Figure 1 above). Factor 2, seemed similar to our *relaxation techniques* category, it grouped responses that indicated that students were putting distance between themselves and their anxiety, the students seemed to disidentify with their anxiety by using relaxation or normalizing self-talk. Factor 3 seemed consistent with our *preparation and planning* category which emphasized planning and scheduling of school work.

The remaining two factors seemed to confirm the findings of previous research on test anxiety which reveals two global factors, emotionality and worry (Endler, 1980; Liebert & Morris, 1967; Sarason, 1988; Deffenbacher & Hazaleus, 1985; Spielberger, 1980). Factor 1 appeared to be an emotionality category concerned with physiological arousal and thoughts concentrating on these physical symptoms. The last factor, Factor 4, seemed to be a worry category although the underlying coherency of the coping response items was more difficult to ascertain as compared to the other three factors.

There seemed to be no differences among the groups by year-in-school, gender, or type of college they were attending on Factor 1, the emotional/physiological scale. The three one-way analyses of variance for the relaxation category, Factor 2, were all significant. The university students indicated greater use of relaxation techniques than the community college students. A follow-up analysis revealed that seniors reported significantly greater use of relaxation techniques than freshmen, and that males utilized relaxation more than females. The preparation and planning scores, Factor 3, were significantly different between the university and community college students only, with the university students reporting more preparation and planning behavior. The scores on Factor 4, the worry scale, were significantly different for gender only. Females worried more than males.

Educational Importance and Future Directions

This *Academic Coping Scale* appears to have value in identifying coping behaviors of students. It may also be of value in assessing whether or not interventions help students acquire more adaptive (or different) methods to cope with stressful evaluative situations and anxiety symptoms. Such an assessment tool would be useful for counselors given Mines's (1985) call for the development of assessment instruments to measure microdevelopmental changes resulting from workshops, brief counseling, or programmatic activities. This kind of instrument would also be useful in investigating the differences in coping behaviors that are employed by high versus low test anxious students.

Based on the results of this pilot study, we believe that we need to (1) revise the number and type of coping categories by consolidating and eliminating certain categories, (2) craft coping responses that are more relevant to each category while eliminating others, (3) simplify the wording in certain coping responses so as to keep only one specific coping behavior in each, and (4) eliminate the critical incidents so that the students will be responding to the coping items under one all-encompassing stem rather than 16 various anxiety producing academic situations. We are currently continuing our work on the *Academic Coping Scale* and hope to produce a useable instrument within the near future.

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